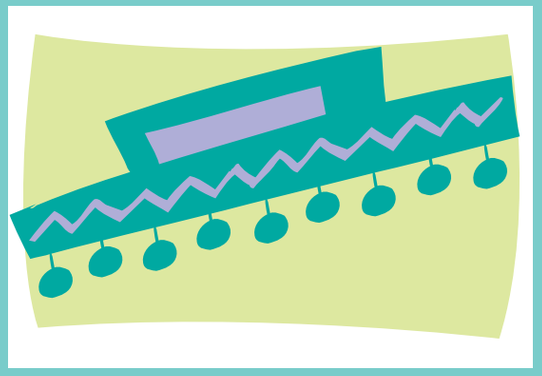
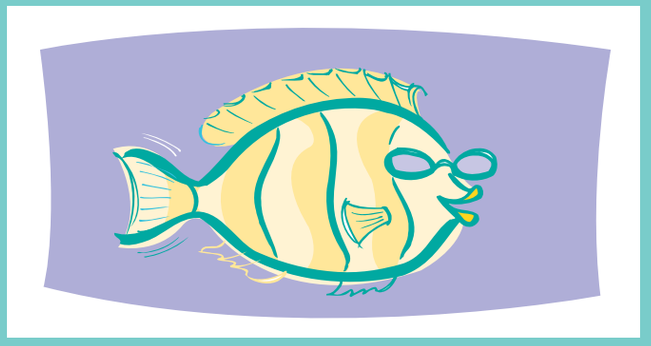
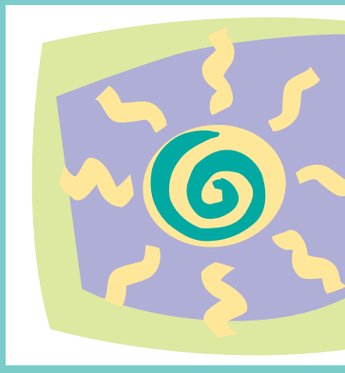
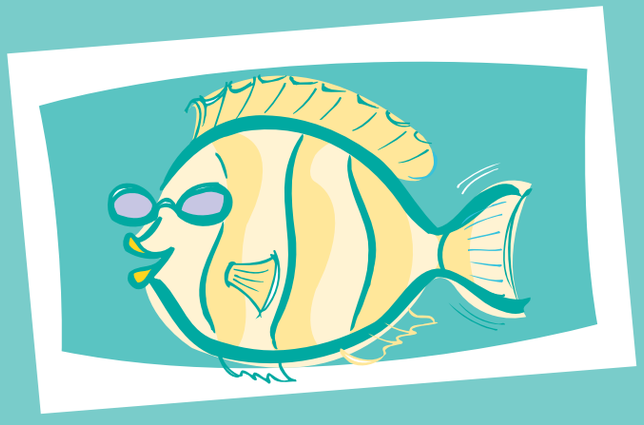
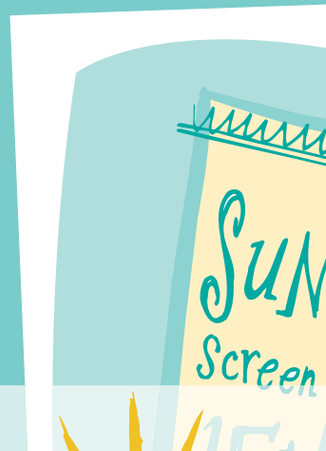
grades 3-5



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a program that **radiates** good ideas

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3-5 EDUCATIONAL STANDARDS

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SUNWISE ACTIVITY TITLE	SUBJECT	EDUCATIONAL STANDARDS: English Language Arts: Standard 1	Standard 2	Standard 3	Standard 4	Standard 5	Standard 6	Standard 7	Standard 8	Standard 9	Standard 11	Standard 12	Health: Health Concepts	Influence Factors on Health Behaviors	Health Information and Products	Interpersonal Communication	Decision-making Skills	Goal-setting Skills	Health Enhancing - Behaviors and Risks	Personal, Family, and Community Health	Mathematics: Numbers & Operations	Algebra	Measurement	Data Analysis & Probability	Problem Solving	Reasoning & Proof	Communication	Connections	Representations	Physical Education: Movement Forms	Physical Activity	Physical Fitness	Responsible Behavior	Respect for Others	Science: Science as Inquiry	Physical Science	Earth & Space Science	Science & Technology	Science in Personal & Social Perspective	Social Studies: Culture	People, Places, and Environment	Science, Technology, and Society	Global Connections
Sun Scoop	English/LA, Health	X			X	X	X	X				X	X	X		X	X		X	X																					
SunWise Word Scramble	English/LA, P.E.											X																			X												
SunWise Virtual Vacation	English/LA, P.E., Social Studies, Computers	X			X				X		X	X																	X												X
The Sun Shines Around The World	English/LA, Social Studies	X			X			X	X	X		X																											X			
Sun Myths From The Internet	English/LA, Social Studies, Computers	X	X	X	X	X		X	X	X	X	X																										X			X
SunWise Fashion Show	Health, Art												X	X	X																										
UV Frisbee® Fun	Health, P.E.																X	X	X												X	X									
Personal Skin Assessment	Health, P.E., Social Studies												X						X	X												X							X			
Sun Safety Survey	Math																				X			X	X		X														
SunWise Word Problems	Math																				X	X			X		X														
Measure Your Shadow	Math, Science, Health												X								X	X	X						X							X	X		X			
Speedy Sun Relay Race	P.E., Health																X	X	X										X		X	X	X								
Sun Science	Science																																	X	X	X						
The Ozone And Me	Science																																		X	X	X	X				
UV Frisbee® Science	Science																																		X	X		X				
Map A SunWise Town	Social Studies, English/LA, P.E., Art					X	X		X			X																				X							X	X		X
Be A SunWise Traveler	Social Studies, Math, Science, Computers																				X	X	X	X	X	X	X	X	X						X		X		X		X	X	X
Supplemental																																											
Sunny Crossword	English/LA																																										
WordWise	English/LA																																										
UV Meter Activities																																											
What Works? Effectively Blocking UV Rays	Science																																	X	X	X						
Chart and Graph UV Intensity	Science, Math																				X		X	X		X		X						X	X	X						
Reflecting UV Radiation	Science, Math																				X		X	X		X		X						X	X	X						

Measure Your Shadow

Directions

Using the sun as your light, you are going to trace your shadow. But first, on a piece of paper, make a chart with two columns and three rows. On the top of your chart label one column "time" and the other "measurement." On the side of your chart at the start of each row, write "first shadow," "second shadow," and "third shadow."

Choose a partner and stand in the sun. With a piece of chalk, your partner will trace your shadow starting from your feet. Write your name inside your traced shadow and record the time and the length measurement of your shadow in your chart.

Later in the day, trace your shadow again. Remember to position your feet in the same spot and face in the same direction as before.

Repeat a third time. Remember to face the same direction as before.

Questions

1 What makes your shadow?

2 Do you always have a shadow?

3 Can the moon make shadows?

4 Is your shadow always the same size? Why or why not?

5 How much time passed between your first and last shadow?

6 What is the difference between the measurements?

7 What is the shadow rule?

Measure Your Shadow

Supplies

Chalk (have a different color for each time the students trace their shadow)
Paper and pencil
School yard with dark cement or blacktop
A clear sunny day
Watch or clock
Yardstick/meter stick

Estimated Time

At least three 15-minute intervals during one day

Learning Objective

The objective of this activity is to demonstrate to students what causes a shadow, how shadows change from morning to evening, and how they can tell by the length of their shadows what times of day they should seek protection from the sun's harmful UV rays. Ask the students to predict how their shadows will change during the day. Once the day is over, ask them to compare their prediction to the actual shape and size of their shadows. Assess what they have learned by asking them to explain the shadow rule.

Directions

Instruct the students to make a chart on a piece of paper to record the time they traced the shadows and the size of the shadows. Also, each student should record his/her own height for comparison. The chart will need two columns and three rows. The top of the chart should be labeled "time" and "measurement." The side of the chart should be labeled "first shadow," "second shadow," and "third shadow." If necessary, draw the chart on the board to show how it should look.

You should take the students outside three times during the day (once around noon). Have students choose a partner. Instruct the students to trace their partner's shadow using a piece of chalk on the cement surface of the schoolyard. They should begin tracing the shadow from the feet. They should write their names inside their shadows. Students should use the yardstick to measure the length of the shadows each time they trace them. Students should record the measurement and time in their charts.

When everyone goes back outside later in the day, have each student stand on the feet of their own shadow and retrace their new shadow on top of the original. Again, they should record the measurement and time in their charts.

Measure Your Shadow

Discussion

Discuss how shadows are formed. A shadow is a dark figure or image cast onto the ground by our bodies intercepting the light of the sun. Both the sun and the moon can create shadows. We have noticeable shadows throughout the day; however, our shadows are much shorter closer to noon when the sun is overhead. Explain to the students that when their shadows are long (during the early and late parts of the day) the sun is not as intense. When their shadows are short (during the middle part of the day) the sun is more intense, and they are at a greater risk to the sun's damaging UV rays. Also mention that visible light, not UV rays, causes shadows. UV rays are present even on cloudy days. Nevertheless, the shadow rule is a good indication of UV intensity. Tell the students of the shadow rule, "*Watch your shadow. No shadow, seek shade!*"

Questions and Answers

1. What makes your shadow? *The rays of the sun shining on one side of your body generate a shadow that is projected away from your body.*
2. Do you always have a measurable shadow? *Yes. When the sun is overhead at noon, the projection of the shadow is much shorter than it is during the rest of the day.*
3. Can the moon make shadows? *Yes. When there is a full moon, the light can create a shadow, but the moon does not emit UV rays.*
4. Is your shadow always the same size? *No. Your shadow is long in the early morning and late afternoon, your shadow is short during midday.*
5. How much time passed between your first and last shadow? *Students should count the hours and minutes on a watch or clock to find the number.*
6. What is the difference between your measurements? *Students should subtract to find the answer.*
7. What is the shadow rule? "*No shadow, seek shade.*"